The Invariant Manifolds and Solar System Dyanmics

we present a simple model of the solar system using a series of planar circular restricted three body systems. Numerical computations of the invariant manifolds provide a remarkable picture of the chaotic diffusion process within the solar system. This is not Arnold diffusion since the system has only two degrees of freedom and is not near-integrable. This diffusion process is the basis for much of the dynamics of the solar system. It brings together many disparate phenomena within solar system dynamics and provides a coherent and simple explanation for their behavior.

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